APPENDIX E
PALEONTOLOGICAL RESOURCE ASSESSMENT

Demere, Thomas A. Ph.D.
Paleontological Resources, La Costa Town Center, Carlsbad, CA.
March 23, 2007

SAN DIEGO NATURAL HISTORY MUSEUM
BALBOA PARK - SAN DIEGO SOCIETY OF NATURAL HISTORY - ESTABLISHED 1874

23 March 2007

Mr. Robert C. Ladwig
Ladwig Design Group, Inc.
703 Palomar Airport Road, Suite 300
Carlsbad, CA 92009

RE: Paleontological Resources, La Costa Town Square, Carlsbad, CA

Dear Bob:

This letter report is an update of an earlier report done in February 2001. Because conditions relative to paleontological resources have not changed, the results of the earlier report are still applicable. The original assessment was based upon a review of existing published and unpublished geological literature (Weber 1982; California Division of Mines and Geology Open-File Report 82-12; Eisenberg, 1983), and a review of museum paleontological records (San Diego Natural History Museum). No field walkover of the site was conducted to confirm these data.

The 81-acre project site is located at the northeast corner of La Costa Avenue and Rancho Santa Fe Road in the City of Carlsbad. The site occupies the northwestern slope of a tributary drainage to Encinitas Creek. Elevations range from approximately 250 feet to over 400 feet above sea level. The geology of the site is characterized by Mesozoic-age basement rocks (Santiago Peak Volcanics) in the proposed residential area and Eocene-age sedimentary rocks (undifferentiated Friars/Delmar formations) in the proposed commercial area.

Concerning paleontological resources, no previous collecting localities were noted in museum records for the project site. However, there are a number of recorded localities within a two-mile radius of the project site. These localities occur in the Eocene-age sedimentary rocks and have produced important skeletal remains of land mammals including carnivore, rodent, rhinoceros, brontothere (large extinct rhino like browser), and protoreodont (small extinct deer like browser), as well as shell remains of estuarine molluscs including clams, oysters, and snails. These fossil remains are very significant and represent one of the richest sources of paleontological information about the Eocene life of California. The paleontological resource potential of the Santiago Peak Volcanics in this area of San Diego County is zero because of the magmatic origin of the rocks.

Based on the proven paleontological resource value of the Eocene-age sedimentary rocks, it is suggested that development of the commercial portion of the project site has the potential to create significant impacts to paleontological resources. These potential impacts will occur when mass excavation activities cut into the Eocene deposits. The zero paleontological resource value of the Santiago Peak Volcanics in the residential portion of the project site suggests that grading of this rock unit will not result in any significant impacts.

Implementing the following measures can ensure mitigation of the impacts discussed above:

[1] Prior to initiation of construction activities the project developer shall retain a qualified paleontologist to carry out the mitigation program outlined here. (A qualified paleontologist is defined as an individual with a MS or Ph.D. in paleontology or geology who is familiar with paleontological procedures and techniques.)

[2] A qualified paleontologist shall be at the pre-construction meeting to consult with the grading and excavation contractors.

[3] A paleontological monitor shall be onsite at all times during the original cutting of previously undisturbed deposits of high sensitivity formations (undifferentiated Friars/Delmar formations) to inspect exposures for contained fossils. The paleontological monitor need not be onsite during the original cutting of previously undisturbed deposits of zero sensitivity formations (Santiago Peak Volcanics). (A paleontological monitor is defined as an individual who has experience in the collection and salvage of fossil materials. The paleontological monitor shall work under the direction of a qualified paleontologist.)

[4] When fossils are discovered, the paleontologist (or paleontological monitor) shall recover them. In most cases this fossil salvage can be completed in a short period of time. However, some fossil specimens (such as a complete large mammal skeleton) may require an extended salvage period. In these instances the paleontologist (or paleontological monitor) shall be allowed to temporarily direct, divert, or halt grading to allow recovery of fossil remains in a timely manner. Because of the potential for the recovering of small fossil remains, such as isolated mammal teeth, it may be necessary to set up a screen-washing operation on the site.

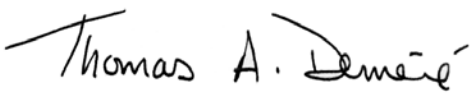
[5] Fossil remains collected during the monitoring and salvage portion of the mitigation program shall be cleaned, repaired, sorted, and cataloged.

[6] Prepared fossils, along with copies of all pertinent field notes, photos, and maps, shall be deposited (as a donation) in a scientific institution with permanent paleontological collections such as the San Diego Natural History Museum. Donation of the fossils shall be accompanied by financial support for initial specimen storage.

[7] A final summary report shall be completed that outlines the results of the mitigation program. This report shall include discussions of the methods used, stratigraphic section(s) exposed, fossils collected, and significance of recovered fossils.

In summary, the project site possesses a potential for producing significant paleontological resources. Development of the project site will result in impacts to these resources. The measures proposed above will ensure proper mitigation of these impacts. Please feel free to contact me if you have any questions concerning my findings.

Sincerely,



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